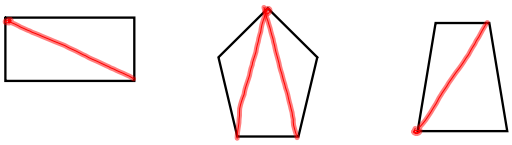
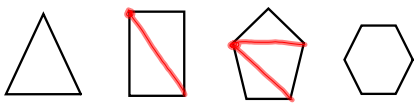
Chapter 8 Quadrilaterals

8-1 Find Angle Measures in Polygons

diagonal--segment that connects nonconsecutive vertices



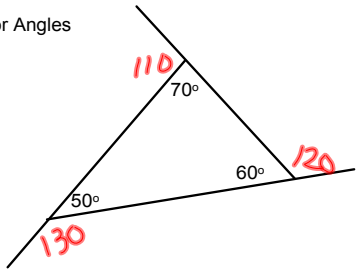


sides	3	4	5	6	n
# of △s	1	2	3	4	(n-2)
degrees	180	360	540	720	(n-2)180

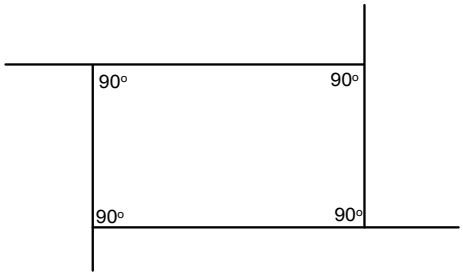
Theorem 8.1 Polygon Interior Angles Theorem
In a convex polygon with n sides, the sum of the interior angles is (n-2)180.

Corollary to Theorem 8.1--Interior Angles of a Quadrilateral--the sum of the measures of the interior angles of a quadrilateral is 360^0.

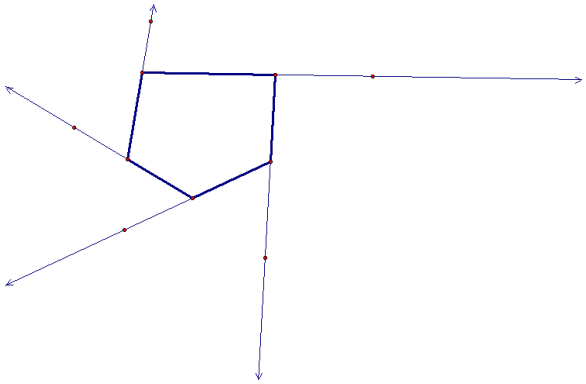
Exterior Angles

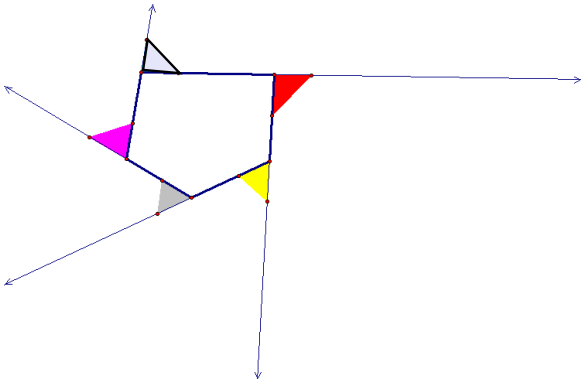


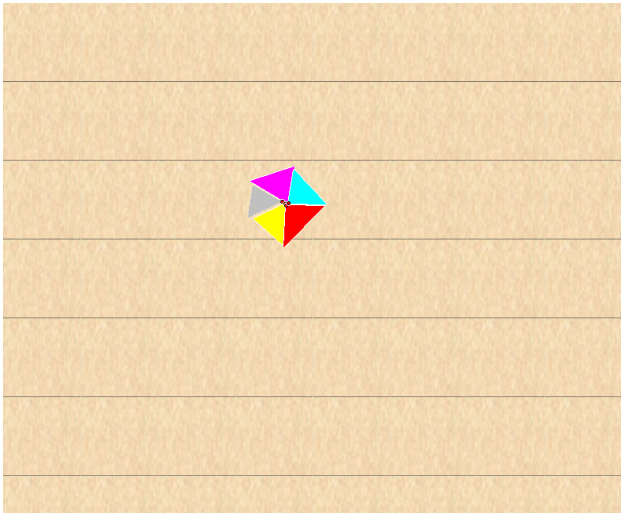
Sum 360°

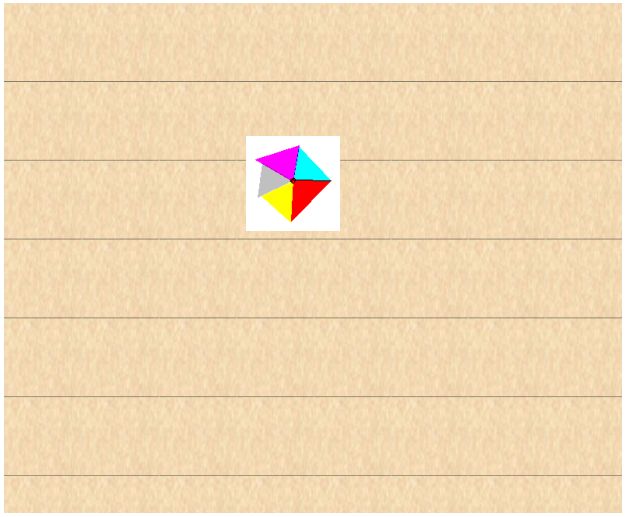


Sum Ext = 360



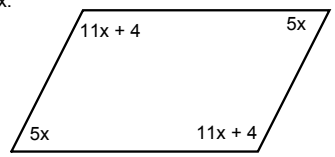






Theorem 8.2 Polygon Exterior Angles Theorem--
In a convex polygon, the sum of the measures of the exterior angles, one at each vertex, is 360°.

Solve for x.

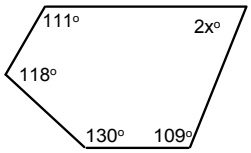


$(4-2)180 = 360$

$2(5x) + 2(11x+4) = 360$

$x = 11$

Solve for x.

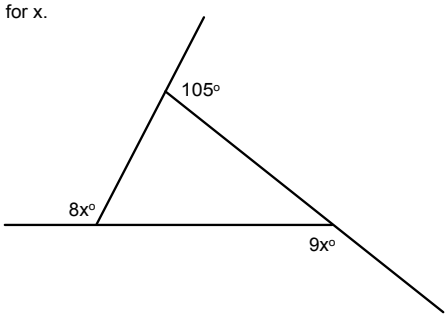


$(5-2)180$

$= 540$

$X = 36$

Solve for x.



Regular Polygon--Both equilateral and equiangular

n	6
interior angle sum	$(n-2)180$ $720°$
exterior angle sum	$360°$
Regular each interior angle	$\frac{720}{6} = 120°$ } supplementary
each exterior angle	$\frac{360}{6} = 60°$ } supplementary

n	10
interior angle sum	$8 \cdot 180$ 1440°
exterior angle sum	360°
Regular each interior angle	$1440 \div 10$ 144°
each exterior angle	36°

n	$360 \div 24 = 15$
interior angle sum	2340°
exterior angle sum	360
Regular each interior angle	156°
each exterior angle	$180-156$ 24°

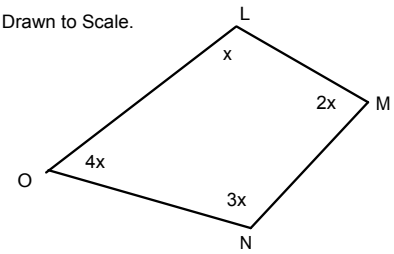
Find ext 1st *

n	30
interior angle sum	5040°
exterior angle sum	360°
Regular each interior angle	168°
each exterior angle	12°

n	
interior angle sum	
exterior angle sum	
Regular each interior angle	
each exterior angle	$13\frac{1}{3}^\circ$

n	DO: #1	#2
interior angle sum		
exterior angle sum		
Regular each interior angle	150^o	
each exterior angle		15^o

Not Drawn to Scale.



Which sides are parallel?

HW
p510-511
#s 3-5, 7-9, 12-15, 19-21, 26

due Monday